



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
STATE HOUSE STATION 17 AUGUSTA, MAINE 04333

*file original*

DEPARTMENT ORDER

IN THE MATTER OF

BOWATER / GREAT NORTHERN PAPER, INC. ) SOLID WASTE ORDER  
MILLINOCKET, PENOBSCOT COUNTY, MAINE )  
WOODASH UTILIZATION PROGRAM APPROVAL )  
#S-21092-SE-B-R (APPROVAL WITH CONDITIONS) ) RENEWAL LICENSE

Pursuant to the provisions of 38 M.R.S.A. Section 1301 *et. seq.* and 06-096 CMR Chapter 567, Rules for Land Application of Sludge and Residuals (effective December 23, 1989) the Department of Environmental Protection ("Department") has considered the application of BOWATER / GREAT NORTHERN PAPER, INC. ("the applicant") with its supportive data, and other related materials on file and FINDS THE FOLLOWING FACTS:

1. APPLICATION SUMMARY

- A. Application: Bowater / Great Northern Paper, Inc. ("Great Northern") has submitted a request for renewal of it's woodash utilization Program Approval license (#S-21092-SE-A-N), which was issued by the Department on June 16, 1993.
- B. History: The applicant received Program Approval #W006373-56-A-N to landspread woodash on approved sites in Penobscot and Aroostook counties on March 27, 1985. The Program Approval license expired on March 27, 1992. On June 16, 1993, the Department issued Order #S-21092-SE-A-N, which relicensed Great Northern's woodash utilization program. The applicant has operated a successful woodash utilization program since 1985.
- C. Summary of Proposal: The applicant requests renewal of their Program Approval license. The applicant also requests approval for distributing woodash to unlicensed compost facilities. In addition, the applicant requests a variance to the maximum concentration limit for cadmium in it's woodash.

2. FACILITY CHARACTERIZATION

Great Northern Paper, Inc. is owned by Bowater Incorporated, a major producer of wood fiber products, and the largest manufacturer of newsprint in the United States. Bowater owns facilities in South Carolina, Tennessee, Maine and Nova Scotia, Canada. Great Northern Paper, Inc. owns paper mills located in Millinocket and East Millinocket,

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Maine, a recycle fiber plant located adjacent to the East Millinocket mill, a lumber sawmill in Nashville Plantation, Maine, and 2 million acres of woodlands.

Great Northern's West Operations papermill in Millinocket utilizes both both mechanical and chemical processes to produce wood pulp. Mechanical pulp is also produced from the stone groundwood method at the East Operations mill in East Millinocket, and shipped by rail to the West Operations mill, along with recycled pulp produced from the East Operations Recycle Fiber Plant.

The woodash proposed for utilization is generated by the bark and wood fueled boiler at the East Millinocket mill. The bark fuel comprises approximately 90% of the total fuel mix, and whole tree chips supply the remaining 10%. The bark fuel is generated at Great Northern's mills in Millinocket and East Millinocket, Pinkham Lumber Company in Nashville Plantation, and wood fuel is also purchased from other area mills as needed. There are no chemicals added to the process. The wood fuel contains no human pathogens, and the resulting woodash generates no strong odors. Approximately 40,000 to 45,000 cubic yards of woodash is generated per year from the biomass boiler.

### 3. PROGRAM APPROVAL REQUIREMENTS

In accordance with Chapter 567, Section A-4.b, the applicant has submitted information demonstrating compliance with the following Program Approval Requirements:

#### A. Ash Characterization

The results of standard chemical analyses of the applicant's woodash indicates that the regulated heavy metals and dioxin are within the limits specified in Department Regulations, Chapter 567, Section B-1.b. and Section D-3.a., with the exception of cadmium;

#### B. Consistency of Inputs

The woodash is produced from the burning of natural untreated wood;

#### C. Program Management

The applicant proposes to conduct a woodash utilization program by performing the following functions:

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- (1) The applicant will submit applications to the DEP in the format required by Department forms on behalf of users of specific sites;
- (2) After initial contacts with a landowner, a field investigation will be performed to:
  - i. Determine the name, address and phone number of each landowner;
  - ii. Develop maps showing the field location with respect to roads, site boundaries, wells, water bodies, intermittent streams, drainage gullies, and any field drainage system;
  - iii. Locate the proposed property on a soils map to identify soil types and provide a Maine certified soil scientist to confirm soils where maps are not available, or when the District Conservationist or Department staff feels there may be a concern with the soils as mapped;
  - iv. Contact the District Conservationist relative to the project area to see whether a soil Conservation Plan has been developed for the site, and coordinate woodash utilization with plan recommendations;
  - v. Describe site history and present use, and indicate slope, drainage, soil types and depth to bedrock;
  - vi. Determine the distances from proposed spreading or stockpiling area to dwellings, wells, surface waters, intermittent streams, drainage gullies and roads;
  - vii. Have the landowner and the generator sign a woodash utilization agreement to verify responsibilities and liability; and
  - viii. Maintain a log showing dates and quantities of all woodash shipments to each site, and deliver a copy to the Department on an annual basis;

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D. Continual Analysis of Woodash

The applicant will perform a complete analysis of the woodash as specified in Chapter 567, Section E-3.1., four times each year;

E. Application Rates and Setback Distances

The woodash will be applied in accordance with Chapter 567, Section E-5.a.2. and Section B-2.b.; and

F. History of Violations

The applicant does not have a history of violations within the past year on sites approved for woodash utilization.

4. VARIANCE REQUEST

Analyses have shown the applicant's woodash to exceed the current state limit of 10 mg/kg for cadmium concentration. The applicant requests a variance to the current limit of 10 ppm, given that historical cadmium concentrations in the applicant's woodash have averaged only slightly more than the current limit, and the applicant has identified poplar species-derived fuel as the most likely source of the metal. The applicant has adjusted the fuel supply, and attempted to stabilize the ash quality and to reduce cadmium concentrations, during the previous period of the woodash program license.

The applicant has proposed that woodash spread under the variance will be restricted to an annual cadmium loading rate not to exceed 0.5 kg/ha per year on land used for food chain crops, and subject to maximum loading limits for metals as set forth in Chapter 567 Section B-1.b. The applicant has reported average cadmium concentrations of 10.3 mg/kg in its woodash. The Department has calculated that woodash of this quality utilized at a maximum loading rate of 3 tons per acre per year (dry weight) would produce an annual cadmium loading rate of .0693 kg/ha/year. At this annual loading rate the applicant could utilize the woodash for 72 years on typical agricultural soils (cation exchange capacity of 5 to 15 MEQ/100g) before reaching the maximum loading limits allowed in Chapter 567 Section B-1.b.

It is extremely unlikely that any site would have this many applications of woodash due to the limiting factors of pH, calcium, and potassium levels of the soil.

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All ash which does not meet Department standards for utilization will be landfilled at Great Northern's Dolby Landfill located in East Millinocket, Maine. The Department finds that a maximum concentration of 15 mg/kg of cadmium in the applicant's woodash is suitable for land application, provided that the applicant monitors soil cadmium concentrations at sites where woodash between 10 and 15 mg/kg is utilized.

## 5. APPLICATION RATES

Application rates for landspreading at utilization sites will be determined by the liming (calcium carbonate) needs specified by soil tests and the calcium carbonate equivalence (expressed as  $\text{CaCO}_3$ ) of the woodash as determined by ash analyses. Agricultural utilization of woodash from Great Northern will strictly adhere to provisions set forth within Chapter 567, Sections E-1., E-2., E-3., E-4., and E-5. Maximum application rates will be limited to:

Maximum dry tons/acre/year ( $\text{CaCO}_3$  equivalence)

Topdressing	2
Incorporated	3

## 6. ASH STORAGE

The applicant has demonstrated that woodash storage at the East Millinocket mill is sufficient to allow effective management of the utilization program. Excess quantities of woodash which can not be stored at the mill, or which exceed Department quality standards, will be disposed of at the applicant's Dolby Landfill.

## 7. COMPOST APPLICATIONS

The applicant requests approval to utilize woodash as an additive in compost operations to control odors, insulate the compost pile, enhance the nutrient content of the compost, and to enhance the color of the compost. Although license #S-21092-SE-A-N approved the distribution of woodash for use as a compost amendment at licensed compost facilities, the applicant also seeks to distribute woodash to composting facilities that are not required to obtain a Departmental permit.

In accordance with Chapter 567, Section E-5.c., woodash may be utilized in Department licensed compost facilities as an odor control agent, carbon source, or as a bulking agent, after the compost facility has received site specific approval from the Department to

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utilize the woodash. It is incumbent upon the entity receiving woodash to secure the necessary approvals for use at their facility.

The Department finds that the applicant's proposed modifications to utilize woodash at compost facilities not regulated by the Department is appropriate, provided that:

- A. No compost facility receives more than 30 dry tons of ash per year from Great Northern, unless licensed by the Department as a compost facility;
- B. In addition to the proposed annual reporting information, Great Northern provides a report summarizing the horticultural benefits afforded by the compost program and any environmental, operational or other problems encountered relative to this program during the previous year; and
- C. All woodash which is distributed by the applicant to unlicensed compost facilities will contain cadmium concentrations of less than or equal to 10 mk/kg.

#### 8. TRAFFIC

The applicant will provide contract trucking to transport the woodash from their facility to approved utilization sites. Based on Great Northern's records of previous ash deliveries, and based on the projected amount of ash generated, staff estimates that 10 or fewer vehicle trips will be made per month to deliver woodash to any utilization site. Woodash will be properly wetted and covered to avoid any loss of ash during transport. No new roads are required to be constructed for the proposed activity. Existing State and Local laws regulate vehicle weight limits and speed limits on roads used to transport materials to utilization sites. The proposed activities are similar in nature to the agricultural activities ongoing at utilization sites.

#### 9. NOISE

Woodash utilization will not generate noise in excess of that generated during normal agricultural operations at any site proposed or currently licensed for ash utilization.

#### 10. ODOR

Prior stockpiling or landspreading of woodash at utilization sites and compost facilities has generated little or no perceptible odor.

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# 11. SCENIC CHARACTER

No new permanent structures are proposed to be constructed for the project. Woodash utilization is consistent with ongoing agricultural activities at utilization sites.

# 12. EROSION

The applicant proposes to, and is required to, follow the siting and management requirements of Department Regulations, Chapter 567 to control erosion.

# 13. UTILITIES

No new utilities are proposed for the project. No new utilities are needed since the project is consistent with the ongoing agricultural activities at utilization sites.

# 14. FLOODING

No currently licensed site is within the 100 year floodplain, and the applicant will not propose future ash utilization sites located within the 100 year floodplain.

# 15. REPORTS

An annual tabulation of the volume of woodash deliveries to each utilization site or compost facility, the actual application rates, and the dates of delivery shall be submitted to the Bureau of Remediation and Waste Management by February 28th of each following year. Woodash analysis results or soils tests which had not previously been submitted to the Department will be included with this annual report.

BASED on the above Findings of Fact, and subject to the Conditions listed below, the Department makes the following CONCLUSIONS:

1. The proposed project will not pollute any water of the state, contaminate the ambient air, constitute a hazard to health or welfare, nor create a nuisance, provided that:
  - A. The applicant will not distribute for utilization woodash with cadmium concentrations in excess of 15 mg/kg, will monitor soil loading rates at utilization sites where woodash containing between 10 and 15 mg/kg is utilized, and will not

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distribute woodash for utilization if this will result in cadmium soil loads in excess of the limits described in Table 2, Chapter 567, Section B-1.b.;

- B. The applicant will not distribute more than 30 dry tons of woodash per year to a facility unless that facility is licensed by the Department for the activity in a solid waste processing facility license, a compost facility license, or other utilization license under Chapter 567;
  - C. The applicant will provide an annual report to the Department summarizing the horticultural benefits afforded by, or other problems encountered relative to, the use of Great Northern woodash at unlicensed compost facilities; and
  - D. All woodash which is distributed by the applicant to unlicensed compost facilities will contain cadmium concentrations of less than or equal to 10 mk/kg.
2. The applicant has the financial and technical ability to develop the project in a manner consistent with State environmental standards;
  3. The applicant has made adequate provisions for traffic movement of all types into, out of and within utilization sites;
  4. The proposed project fits harmoniously into the existing natural environment and will not adversely affect existing uses, scenic character, air quality, water quality or other natural resources in the municipalities or in neighboring municipalities;
  5. The proposed facilities will be on soils types suitable to the nature of the undertaking and will not cause unreasonable erosion of soil or sediment;
  6. The proposed facilities will not pose an unreasonable risk that a discharge to a significant groundwater aquifer will occur;
  7. The applicant has made adequate provisions for utilities including water supplies, sewerage facilities, solid waste disposal and roadways required for the project, and the proposed facilities will not have an unreasonable adverse effect on the existing or proposed utilities and roadways in the municipalities or area served by those services; and
  8. The activity will not unreasonably cause or increase the flooding of the area or adjacent properties nor create an unreasonable flood hazard to any structure;



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THEREFORE, the Department APPROVES the above noted application of BOWATER / GREAT NORTHERN PAPER, INC. SUBJECT TO THE ATTACHED CONDITIONS, and all applicable standards and regulations:

1. The Standard Conditions of Approval, a copy attached as Appendix A.
2. Within one year of land application, the applicant shall analyze soil cadmium levels at sites where ash with a cadmium concentration between 10 mg/kg and 15 mg/kg has been land applied. The applicant shall not apply woodash on fields that have cadmium loads in excess of the limits described in Table 2, Chapter 567, Section B-1.b.
3. The applicant shall analyze its woodash on a quarterly basis as specified in Chapter 567, Section E-3.1. Composite representative samples of woodash shall be obtained and analyzed for the following parameters: Aluminum; arsenic; barium; boron; cadmium; calcium; chloride; chromium; copper; phosphorus; potassium; selenium; vanadium; zinc; pH units; percent volatile solids; percent solids; and percent CaCO<sub>3</sub> equivalency. Analytical results shall be submitted to the Bureau of Remediation and Waste Management within 30 days of receipt.
4. Great Northern can not distribute more than 30 dry tons of ash per year to any facility, unless that facility is licensed by the Department for utilization, use or disposal of the ash.
5. All woodash which is distributed by the applicant to unlicensed compost facilities shall contain cadmium concentrations of less than or equal to 10 mg/kg.
6. Ash with cadmium concentrations in excess of 15 mg/kg may not be utilized.
7. An annual tabulation of the volume of woodash deliveries to utilization sites or compost facilities, the actual application rates, and the dates of delivery shall be submitted to the Bureau of Remediation and Waste Management by February 28th of each following year. Woodash analyses or soils tests which had not previously been submitted to the Department shall be included with this annual report.
8. A report summarizing the horticultural benefits afforded by the compost program, including any environmental, operational or other problems encountered relative to the program during the previous year, shall be submitted by Great Northern to the Department by February 28th of each following year, provided that woodash from Great Northern was distributed to unlicensed compost facilities during the previous year.

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9. The term of this Program Approval is five (5) years from the date of filing with the Board of Environmental Protection.

DONE AND DATED AT AUGUSTA, MAINE THIS TwentySecond DAY  
OF January 1999.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

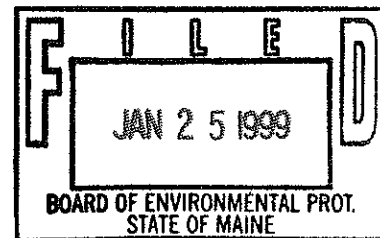
BY: [Signature]  
Edward O. Sullivan, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE APPEAL PROCEDURES.

Date of initial receipt of application: June 15, 1998

Date of application acceptance: July 7, 1998

Date filed with Board of Environmental Protection:



This Order prepared by Rick Haffner, Bureau of Remediation and Waste Management.

XRH31097/llg

## Appendix A

### SOLID WASTE LICENSE STANDARD CONDITIONS

**STRICT CONFORMANCE WITH THE STANDARD AND SPECIAL CONDITIONS OF THIS APPROVAL IS NECESSARY FOR THE PROJECT TO MEET THE STATUTORY CRITERIA FOR APPROVAL. VIOLATIONS OF THE CONDITIONS UNDER WHICH A LICENSE IS ISSUED SHALL CONSTITUTE A VIOLATION OF THAT LICENSE, AGAINST WHICH ENFORCEMENT ACTION MAY BE TAKEN, INCLUDING REVOCATION.**

1. This order is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant. Any variation from the plans, proposal and supporting documents is subject to the review and approval of the Board or the Commissioner prior to implementation.
2. The applicant shall secure and comply with all applicable Federal, State and local licenses, permits, authorizations, conditions, agreements and orders, prior to or during construction and operation as appropriate.
3. The applicant shall submit all reports and information requested by the Board or Department demonstrating that the applicant has complied or will comply with all conditions of this approval. All preconstruction terms and conditions must be met before construction begins.
4. Advertising relating to matters included in this application shall refer to this approval only if it notes that the approval has been granted WITH CONDITIONS, and indicates where copies of those conditions may be obtained.
5. No persons shall transfer a license for a solid waste disposal facility without first obtaining Board approval for the transfer of the ownership of the solid waste disposal facility. For a solid waste disposal facility, the Board, at its discretion, may require that the proposed new owner of the facility apply for a new license or may approve the transfer of the existing license upon a satisfactory showing that the new owner can abide by its terms and conditions and comply with the provisions of 38 M.R.S.A. Section 1310-Q. Public notice shall be provided in accordance with Chapter 400.4.D of the Solid Waste Management Rules.

6. If the construction or operation of the activity is not begun within two years, this approval shall lapse and the applicant shall reapply to the Board of a new approval. The applicant may not begin construction or operation of the development until a new approval is granted. Reapplications for approval shall state the reasons why the development was not begun within two years from the granting of the initial approval and the reasons why the applicant will be able to begin the activity within two years from the granting of a new approval, if granted. Reapplications for approval may include information submitted in the initial application by reference.
7. If the approved development is not completed within five years from the date of the granting of approval, the Board may reexamine its approval and impose additional terms or conditions or prescribe other necessary corrective action to respond to significant changes in circumstances which may have occurred during the five-year period.
8. A copy of this approval must be included in or attached to all contract bid specifications for the development.
9. Work done by a contractor pursuant to this approval shall not begin before the contractor has been shown by the developer a copy of this approval.
10. All solid waste disposal facilities are required to accept only solid waste which is subject to recycling and source reduction programs at least as effective as those imposed by State law.
11. No solid waste facility licensee shall knowingly hire as an officer, director or key employee, or knowingly allow to acquire as equity interest or debt liability interest, any person having been found guilty of a felony or of a violation of environmental law or rules without first obtaining the approval of the Board.
12. Whenever any lot of land for solid waste disposal facilities is transferred by deed, the following shall be expressly stated in the deed:
  - A. The type of facility located on the lot and the dates of its establishment and closure.
  - B. A description of the location and the composition, extent, and depth of the waste deposited.

If asbestos-containing waste or asbestos-contaminated waste has been disposed on a site, the location coordinates must be identified (refer to Chapter 405).